Municipal Separate Storm Sewer Systems (MS4s)

What is included in an MS4 permit?

Municipal separate storm sewer systems (MS4s) are systems of storm sewers, gutters, storm drain inlets and similar features that are owned by cities, counties and other governmental entities. They collect and discharge stormwater to local waterbodies. MS4 permits are issued by the Colorado Department of Public Health and Environment, Water Quality Control Division. The division regulates point sources of pollution from pipes and drains that flow directly from municipalities to a state water. Permits expire every five years, but can be administratively extended.

The MS4 permits authorize all discharges from the MS4 not just stormwater. The MS4 permits require MS4 permittees to develop and run a program to control stormwater discharges to the MS4. The permits do not typically set numeric limits for discharges from stormwater outfalls into state waters.

Permits also include control measures for MS4 permittees that have a wasteload allocation in a total maximum daily load (TMDL). A TMDL is the maximum amount of a pollutant that can be received by a waterbody and still meet water quality standards. In other words, a TMDL is a pollution diet for a waterbody.

Required control measures/best management practices (BMPs):

- Public education and outreach.
- Public involvement and participation.
- Illicit discharge detection and elimination.
- Construction sites.
- Post-construction stormwater management in new development and redevelopment.
- Pollution prevention/good housekeeping for municipal operations.
- Wet weather monitoring (applies to medium & large MS4s only).
- Industrial facilities.

What is stormwater? Why can it be a problem?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks and streets prevent stormwater from naturally soaking into the ground. Stormwater can pick up debris, trash, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river or wetland.

Municipal storm sewer systems are designed to drain excess stormwater or snow melt from streets, parking lots and sidewalks. Municipal storm sewer systems are made up of storm drains, usually cuts in curbs, which flow through underground pipes to a local waterway. Anything that enters the storm sewer system is discharged untreated into waterways used for swimming, fishing and providing drinking water. Municipal storm sewer systems in Colorado do not flow to sewage treatment plants.

Polluted stormwater runoff can have adverse effects on plants, fish, animals and people. Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Excess nutrients can cause algal blooms. Debris and trash can choke, suffocate, or disable aquatic life like ducks, fish, turtles and birds. Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil and other auto fluids can poison aquatic life. Polluted stormwater can also affect drinking water sources, affecting human health and increasing drinking water treatment costs.

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INFORMATION

cdphe.colorado.gov/wq-municipal-ms4-permits

MS4 Permittee Stormwater Programs

How is an MS4 permit different from a traditional permit?

Municipal separate storm sewer system permits typically do not include numeric limits, but instead require municipalities to implement a stormwater program with practice-based limits also known as control measures (which includes BMPs) to control pollutants from getting into stormwater. Another unique feature of MS4 permits is the division's use of the "maximum extent practicable" or MEP standard when setting permit requirements. The MEP standard is an iterative process meant to continually adapt to current conditions and BMP effectiveness while striving to attain water quality standards.

In plain language, the division interprets the term "maximum extent" to mean that the standard was not intended to be the minimum, or the average, or a single maximum, but a maximum that can be achieved by permittees operating a compliant stormwater program. The MEP standard recognizes that there are municipalities that implement programs beyond the MEP standard. This is consistent with the goal of establishing a standard that all municipalities can and must implement. Permittees are not tasked with setting the MEP standard. The division sets the requirements of the MEP standard in permits.

The division iteratively refines the MEP standard and updates permit requirements through the routine permit review and renewal process. The division considers applicable laws and regulations, audits and screenings of municipalities covered under MS4 permits, stakeholder input, MS4 permits in effect issued by other permitting authorities (states and EPA) and published studies (e.g., information on green infrastructure, etc.).

The public is welcome and encouraged to comment on the draft permit when it is out for public notice. The public can also contact the permit writer during the permit renewal process to ask questions and/or provide additional information.

How can you get involved?

The process for writing permits includes these steps:

1. **Draft the permit**
   a. **Receive the application and review for completeness.**
   b. **Contact the permittee to obtain updated information, obtain additional data and hold a meeting with permittee to address any major issues.**
   c. **Draft the permit and related documents.**
2. **Public Notice**
   a. **Send an official notice of the draft permit to the permittee and publish notice of the draft permit.**
   b. **Answer questions from the permittee and the public.**
   c. **Notice and hold a public meeting as required (or requested).**
3. **Permit Issuance**
   a. **Review and compile comments.**
   b. **Draft responses to comments and changes to permit documents.**
   c. **Issue permit.**
   d. **Allow 30 days for an appeal.**
   e. **Permit becomes effective 30 days after issuance.**

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Public education and outreach

The public education and outreach program should inform citizens and businesses about stormwater pollution and illicit discharges. The program should inform citizens of steps they can take to reduce stormwater pollution, such as properly disposing of trash as well as applying pesticides and fertilizers so that excess lawn care chemicals do not wash into local waterways during the next rainstorm.

Public involvement and participation

Permittees use this program to offer citizens an opportunity to comment on their municipalities' stormwater program and participate in its implementation. One example is a hotline that citizens can call if they see dirt on roadways from construction sites that may wash into a local stream.

Illicit discharge detection and elimination

Illicit discharges enter a MS4 through the curb and gutter system. Stormwater and all pollutants picked up in curbs and gutters flow directly to local waterways. Permittees use this program to respond to reports of illicit discharges and clean up potential pollutants such as used motor oil, grass clippings, leaves, grease from restaurants and dirty wash water from power washing sidewalks.

Construction sites

Discharges from construction sites can include pollutants such as sediment, fuel and oil, and trash and other solid wastes. Permittees use the construction sites component of their stormwater program to require construction sites that are one acre or more to install and maintain measures to control and reduce dirt and other pollutants from discharging to local waterways.

Post-construction stormwater management in new development and redevelopment

It is usually less expensive to remove pollutants from stormwater before it enters the MS4 rather than to treat polluted stormwater after it is discharged to a state water. The program requires a control measure to control stormwater pollution once construction is complete. The program applies to new development and redevelopment that is one acre or more. Slowing the stormwater flow allows dirt and other pollutants to settle out of stormwater before discharging the cleaner stormwater into local waterways.

Pollution prevention and good housekeeping for municipal operations

Most permittees have municipal yards where vehicles and materials, such as roadway salt and sand are stored. Uncontrolled stormwater flowing off of municipal yards can pick up dirt, salt and other chemicals and deposit the pollutants into a local waterway. Permittees use this component of their stormwater program to implement procedures to prevent/reduce the exposure of potential pollutants to stormwater. For example, permittees will cover salt and sand piles, conduct employee training on the proper operation and maintenance of the MS4, and sweep the yard of any trash or other potential pollutants and control illicit discharges.

Wet weather monitoring

Some MS4 permittees are required to monitor at least one stream during wet weather events.

Industrial facilities

Although the division permits stormwater discharges from industrial facilities directly, some MS4 permittees are required to conduct some activities for industrial facilities that they determine are adding a significant amount of pollutants to the MS4. Most programs include educating industrial facilities and reminding them not to pollute stormwater.